Synthesis of Arctic Research (SOAR) Status and Plans

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mini- AMSS: 22 April 2015



SOAR OVERVIEW



- WHO: BOEM-funded program; Heather Crowley, COR
 10 member Science Steering Committee, meets annually
- WHAT: Synthesis of marine science data & observations, published as peer-reviewed papers
- WHERE: Focus is US waters of the Pacific Arctic Region (PAR)
- WHY: Improve understanding of the PAR marine ecosystem
- WHEN: 5-year project (2011 2016) in 2 Phases
 Phase I: 2011-14 what's done
 Phase II: 2015-2016 what's next

http://www.arctic.noaa.gov/soar/

2011-14: Key Milestones

2011: Convene Science Steering Committee – plan SOAR Phase I

MARCH 2012

2012-2013

Science Workshop

Synthesis Themes

Project Teams (PT)

Integration & Analysis

PT Proposals = \$\$

Quarterly Updates

2014-15

Science Products

Manuscript Submissions

Science Presentations

Education Outreach



Coordination with PacMARS

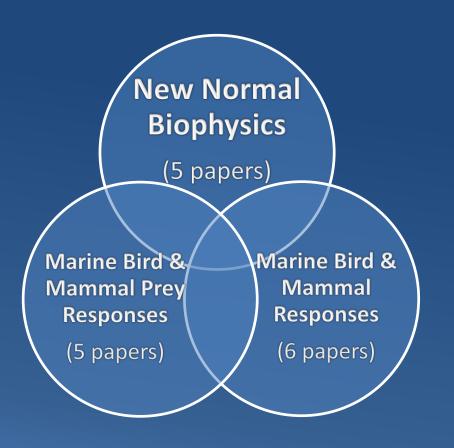
SOAR Status after the March 2012 Science Workshop

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whales environmental acoustic concentration
                      whates environmental acoustic climate zooplankton climate reductions conditions seals data major periods northern upwelling seals prey fall near habitats shelf fish hotspots taxa north near seals acoustic climate sooplankton climate periods periods periods and periods periods taxa north near seals acoustic climate reductions conditions are periods and periods are periods as a seal of the period of the per
Arctic species seabirds corridor Barrow nearshore spring Hanna BCB
                                                                                                                                                                                           effects highly SeaS polar Basin
                consumption Changes condition spatial harvested locations

Change cod Pacific annual OA patterns diet migration predators feeding season water trophic satellite hotspot population Anadyr long-term western Canada
                                      UTL Island BCI Chukchi benthic study ecosystem NPP wind Chukchi body important
communities increase region ocean shifts historical expected variability recent activity extent 1 Ce duration risk mammals significant area marine bowhead seasonal distributions area Bering marine Beaufort
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2012-2015: Synthesis teams form, meet, analyze data, prepare & submit manuscripts

SOAR Papers: 3 Themes - Lead Authors



Progress in Oceanography, Special Issue * Published on-line, Open Access

- Bio-physics of the 'New Normal' Pacific Arctic
 Arrigo, Frey, *Mathis, Wood
- Marine Bird & Mammal <u>Prey Responses</u>

 Grebmeier, Logerwell, Crawford, Divoky, Lovvorn
- Marine Bird & Mammal Responses

*<u>Citta</u>, Clark, George, Harwood, Kuletz, MacIntyre

16 papers; 111 Authors; > 30 institutions



SOAR PHASE I: Theme Highlights



http://www.arctic.noaa/soar/

• THEME 1:

'New Normal' PAR: Sea Ice & 1º Productivity
Ocean Acidification Risk Assessment for
Alaskan waters

• THEME 2:

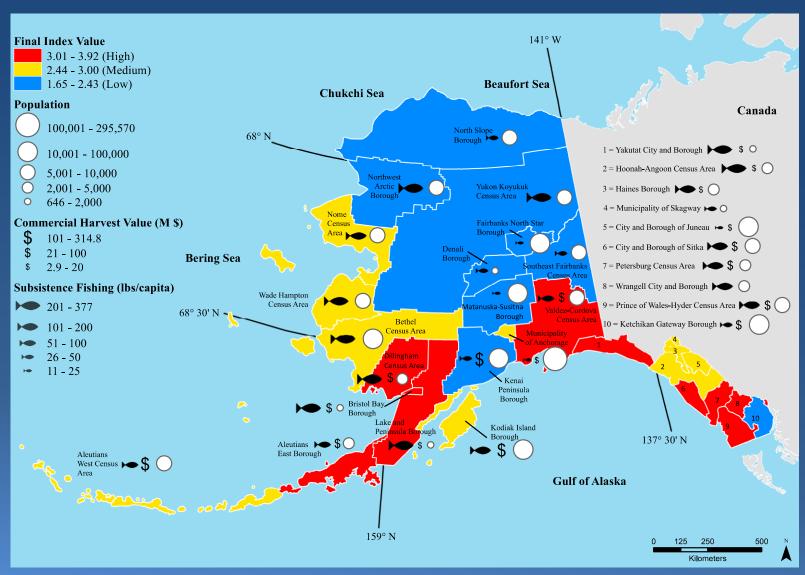
Benthic Hotspots across space & time Fish Communities across a habitat spectrum Diets of marine birds & seals, local & regional

• THEME 3:

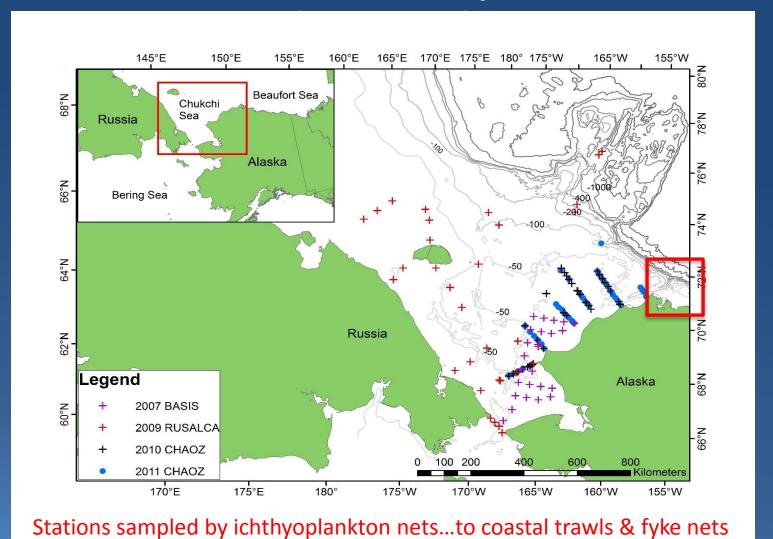
Bowhead whale core-areas & body condition Bowhead & bearded seal acoustic ecology Seabird & marine mammal seasonal hotspots Upper-trophic species as ecosystem sentinels



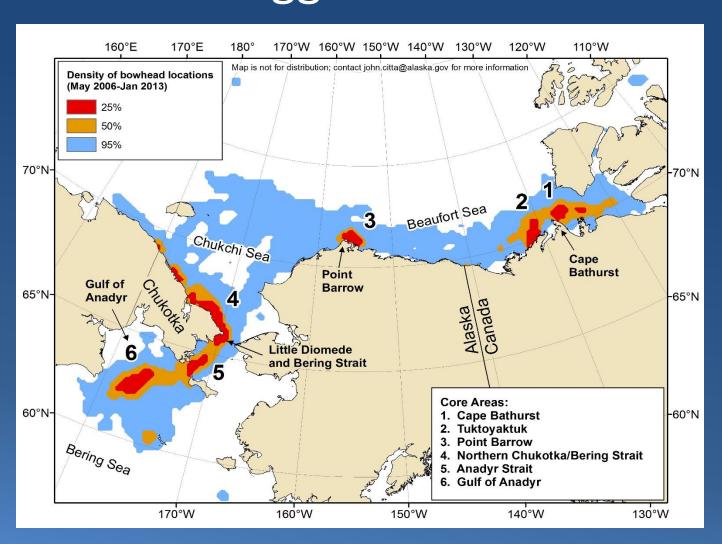
*Mathis et al. OA Risk Assessment: ocean chemistry, fisheries harvest & demographics



Logerwell et al. Fish Communities across a habitat spectrum



*Citta et al. Bowhead Whale Core-Use Areas: 54 tagged whales 2006-12



SOAR Phase II

Goal

 Expand and build upon SOAR Phase I findings

Product

 Publication of a 6-8 papers 'Theme Section' in peer-reviewed journal

Timeline

January 2015 – May (or Sep) 2016

The 2-Phases of SOAR (bottom up/top down)

SOAR Special Issue

Project Teams

Community Workshop

SOAR Phase

SOAR Theme Section Topic Champions Synthesis Topics



SOAR Phase I

THANKS TO:

BOEM

Heather Crowley
Charles Monnet (retired)

AUTHORS & PROJECT LEADERS

they have done (are doing) all the heavy lifting



